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ABSTRACT

This document summarizes in non-technical terms the preliminary policy-relevant findings of a national evaluation of the Emergency School Aid Act (ESAA) Basic and Pilot Programs during the second year of program operations, 1974-75. An attempt is also made to relate the second year results to findings in the first evaluation year, 1973-74. A major objective of the study has been to assess the overall impact of the ESAA Basic and Pilot programs on students' academic skills and on certain desegregation-related outcome measures. Accordingly, results of the impact analyses are reported here. However, it has been apparent from the earliest stages of data collection that the results of any such overall impact study would almost certainly be difficult to interpret because of the wide variations found among local ESAA projects with respect to specific project goals, approaches taken to reach these goals, and the magnitude and quality of project resources applied to the goals. In such an evaluation, the deficiencies of some projects may obscure the successes of other projects. Accordingly, this report places considerable emphasis on the identification of elements of characteristics of the school programs that seem to have helped disadvantaged students, regardless of the source of funding for those programs. (Author/RC)

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National Evaluation of the Emergency School Aid Act (ESAA): Summary of the Second-Year Studies

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NATIONAL EVALUATION OF THE EMERGENCY SCHOOL AID ACT (ESAA):

SUMMARY OF THE SECOND-YEAR STUDIES

John E. Coulson

July, 1976

Emergency School Aid Act National Evaluation
United States Office of Education Contract Numbers
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Special thanks are given to Dr. Jean Wellisch, Dr. Dan Ozenne, Dr. Clarence Bradford, and Ms. Anne MacQueen for their reviews of this summary report and for their constructive suggestions regarding certain interpretations of the findings.

Also gratefully acknowledged are the recommendations and comments of the ESAA Evaluation National Advisory Panel, whose members made significant substantive suggestions and helped to provide broad perspective in interpretations of the study's findings. Other important contributions were made by the Presidentially appointed National Advisory Council on Equality of Educational Opportunity, which reviewed an earlier draft of materials on which this document is based.

The Equal Educational Opportunity (EEO) Program administration and staff, especially Dr. George Rhodes, were extremely helpful in providing access to program records and in commenting on evaluation plans and products. Appreciation is also expressed to the Office of Civil Rights for providing data on minority-group isolation, based on its survey of school districts. Finally, we wish to acknowledge the cooperation of administrators and staff in the sample districts and schools, without whose participation this study could not have been conducted.

Interpretations and conclusions discussed in this document do not necessarily reflect the views of the U.S. Office of Education, or of any other agency, individual, or panel acknowledged above.

PREFACE

This document summarizes in non-technical terms the preliminary policy-relevant findings of a national evaluation of the Emergency School Aid Act (ESAA) Basic and Pilot Programs during the second year of program operations, 1974-75. It is intended to provide an overview of the results reported in two larger and more detailed companion volumes prepared for the U.S. Office of Education by System Development Corporation.* An attempt is also made in this volume to relate the second-year results to findings in the first evaluation year, 1973-74. It is strongly recommended that interested readers examine the cited reports, which provide a much more detailed picture of the ESAA program and its effects than can possibly be provided in the present abbreviated document. In particular, the materials referenced above describe the study's research methodology and present data upon which all of the evaluation findings, not simply the highlights summarized below, are based. Also recommended for review by interested readers is a document** produced in conjunction with the ESAA evaluation, describing SDC's restandardization of an existing standardized achievement test on the basis of data collected from students enrolled in a nationally representative sample of minority-isolated schools.

A major objective of the study, as initially defined by the U.S. Office of Education, has been to assess the overall impact of the ESAA Basic and Pilot programs on students' academic skills and on certain desegregation-related outcome measures. Accordingly, results of impact analyses are reported in this document. However, it has been apparent from the earliest stages of data

*Coulson, J. E., Ozenne, D. G., Bradford, C., Doherty, W. J., Duck, G. A., Hemenway, J. A., and Van Gelder, N. C. The Second Year of Emergency School Aid Act (ESAA) Implementation, TM-5236/009/00, System Development Corporation, July 1976.

Wellisch, J. B., Marcus, A. C., MacQueen, A. H., and Duck, G. A. An In-Depth Study of Emergency School Aid Act (ESAA) Schools: 1974-75, TM-5236/010/00, System Development Corproation, July 1976.

**Ozenne, D. G., Van Gelder, N. C., and Cohen, A. J. Emergency School Aid Act (ESAA) National Evaluation: Achievement Test Restandardization, TM-5236/006/00, System Development Corporation, November 1974.

collection that the results of any such overall impact study would almost certainly be difficult to interpret because of the wide variations found among local ESAA projects with respect to specific project goals, approaches taken to reach these goals, and the magnitude and quality of project resources applied to the goals. In such an evaluation, the deficiencies of some projects may obscure the successes of other projects. Accordingly, this report places considerable emphasis on the identification of elements or characteristics of the school programs that seem to have helped disadvantaged students, regardless of the source of funding for those programs.

NATIONAL EVALUATION OF THE EMERGENCY SCHOOL AID ACT (ESAA): SUMMARY OF THE SECOND-YEAR STUDIES

In conjunction with and under contracts from the U.S. Office of Education, System Development Corporation (SDC) is conducting an evaluation of two closely related programs authorized under the Emergency School Aid Act (ESAA)--the Basic and Pilot Grants programs. The Basic Program is a desegregation assistance program in which grants are awarded to eligible school districts to encourage the reduction of minority-group isolation, to meet the special needs incident to the elimination of segregation and discrimination, and to assist elementary and secondary school children in overcoming the educational disadvantages associated with minority-group isolation. Basic Grants may be awarded to any Local Education Agency (LEA) that (a) is implementing a desegregation plan or has adopted and will implement such a plan if assistance is made available; or (b) has a plan to enroll non-resident children in its schools to reduce minority-group isolation; or (c) has no desegregation plan but has minority-group student enrollment exceeding 50 percent, provided that the LEA establishes or maintains at least one integrated school.

In contrast to Basic Grants, Pilot Project Grants are awarded to LEAs for unusually promising projects designed to overcome the adverse effects of minority-group isolation by improving the academic achievement of children in minority-isolated schools (i.e., schools with 50% or greater minority enrollment. To be eligible for a Pilot Grant, an LEA must be implementing a desegregation plan or a plan to reduce minority-group isolation that would make it eligible for a Basic Grant. In addition, at least 15,000 minority-group students must be enrolled in the schools of the LEA, or minority-group students must constitute more than 50 percent of the total LEA enrollment.

The combined Basic/Pilot evaluation involves the collection of data over a period of three school years: 1973-74, 1974-75, and 1975-76. A previous report* described the evaluation results for the first year (1973-74). The present report describes evaluation results for the second evaluation year (1974-75) and also discusses longitudinal findings for the combined first two years. A subsequent report will present results for 1975-76, as well as cumulative trends over the three-year period.

For the Year One Report, the only available criterion measures of program success were students' scores on standardized achievement tests in reading and mathematics. In 1974-75, increased emphasis was placed on desegregation-related activities and outcome measures. Specifically, achievement test scores were supplemented by indicators of desegregation-related school climate. Also used was a third type of program outcome measure based on minority-group isolation data collected by the Office of Civil Rights.

The overall design of the combined Basic/Pilot evaluation involves the collection of comparable program and outcome data in both treatment (ESAA-funded) and control (non-ESAA) schools. To select the treatment and control schools, pairs of similar schools were identified in sample ESAA districts; one member of each selected pair was randomly assigned to the treatment condition and the other to the control condition. Sample students were then drawn randomly across classes in each sample school in grades 3, 4, and 5 in the elementary schools (Basic and Pilot samples), and grades 10, 11, and 12 in the secondary schools (Basic sample only). This evaluation design made it possible to compare two groups of schools (treatment and control) that were matched in all important characteristics examined except those associated with the award of ESAA funds to the treatment schools. We could then determine whether the two sets of schools--one receiving

*Coulson, J. E., Ozenne, D. G., Van Gelder, N. C., Inuzuka, D., Bradford, C., and Doherty, W. J. The First Year of Emergency School Aid Act (ESAA) Implementation, TM-5236/008/00, System Development Corporation, September, 1975.

ESAA funds and the other not receiving such funds--showed corresponding differences in resource allocation, in services offered to the students, and in educational approaches. Only if such program differences were found, would we expect differences in outcome (e.g., in student achievement gains) for the treatment and control schools.

Achievement tests and school climate instruments were administered to sample students near the beginning and end of the school year. In addition, questionnaires were administered to superintendents, ESAA coordinators, district business managers, principals, teachers, and students in the spring to obtain data on district, school, and program characteristics, and on background characteristics of students and school personnel.

The samples for 1974-75 (ESAA-funded treatment schools plus non-ESAA control schools) included 44 Pilot Elementary Schools, 70 Basic Elementary Schools, and 38 Basic Secondary Schools in 78 ESAA-funded school districts. Both pretest and posttest data were available for a total of 17,297 students in grades 3 through 5 and 10 through 12. The longitudinal samples (districts, schools, and students in the sample for both 1973-74 and 1974-75) included 26 Pilot Elementary schools, 70 Basic Elementary schools, and 22 Basic Secondary schools in 61 ESAA-funded districts; the total number of students in these samples was 6,593.

CHARACTERISTICS OF SAMPLE DISTRICTS AND SCHOOLS

About half of the ESAA Basic Elementary and Pilot Elementary sample districts in 1974-75 were located in the Southeast and South Central portions of the country, while the Basic Secondary sample was even more heavily distributed (almost 70%) in those two areas. This geographic distribution corresponds roughly to the distribution of the 1974 award universe, i.e., of the total set of districts receiving ESAA Basic and Pilot grants in 1974.

Sample ESAA districts had relatively large proportions of economically disadvantaged students, as indicated by the percentages of students sufficiently disadvantaged to be eligible for Elementary and Secondary Education Act (ESEA) Title I services. These percentages ranged from about 30% for the Basic Elementary and Basic Secondary samples to around 40% for the Pilot Elementary sample. Overall, districts with the highest percentages of such students were in the Southeast and the South Central sections of the nation.

ESAA Basic sample districts tended to be urban, with around three-fourths of the districts located in a city or town, and only around 10% in rural communities. Around 60% of the Basic Elementary sample districts and a third of the Basic Secondary sample districts were in cities with populations of at least 50,000, and many were in cities of over 200,000. The Pilot sample was slightly less urbanized, with one-fourth of the sample located in rural areas; even here, however, about half the Pilot districts were in cities or towns.

Reflecting their predominantly urban nature, most sample Basic districts were fairly large; the typical district in the Basic Elementary sample had an enrollment of 8,000 to 50,000 students, while most districts in the Basic Secondary sample had enrollments from 20,000 to 50,000 students. Pilot sample districts tended to run somewhat smaller, with a median enrollment of around 8,000 students.

Most of the sample districts had achieved a substantial degree of desegregation prior to the initial award of ESAA grants in 1972. That is, the racial/ethnic mix of students in each school tended to match fairly well the racial mix averaged across the entire district.* Furthermore, with regard to Black and White students, at least, the degree of racial balance in the districts receiving ESAA grants was clearly superior to that in a survey of almost half the nation's

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*It is important to note that the desegregation indices used in this study simply reflect, at a fairly gross level, the district/school racial balance. They do not provide a picture of the status of school integration, in terms of interpersonal interactions or attitudes.

districts, conducted by the Office of Civil Rights in 1972. This is a highly positive finding in one respect. It indicates that, quite appropriately, ESAA grants were typically awarded to districts that had already desegregated to a considerable extent, and were presumably used to help the districts meet needs incident to the desegregation. However, this finding also means that there was little room for further improvement in racial balance after the grants were awarded (although a few districts did show reduction in minority isolation during the evaluation period). Thus, reduction in minority isolation did not prove a useful outcome for assessing ESAA program impact.

Basic Elementary schools had about 45% minority students, while the Basic Secondary schools had 35% minority enrollment. Pilot Elementary schools, according to ESAA eligibility requirements, were in districts that met Basic Grant requirements and were desegregating (or at least had a plan for desegregating). Pilot-eligible schools also had to have at least 50% minority students; the Pilot sample schools had an average minority enrollment of 82%.

Minority representation among staffs in the sample schools was consistently lower than that among the students. The largest deviation was in the Pilot Elementary sample, where 66% of the students were Black, but only 40% of the schools' staff members were Black.

In sample schools, as in the sample districts overall, the percentage of disadvantaged students in the Pilot Elementary schools (i.e., minority-isolated) was generally higher than that in the Basic Elementary schools (i.e., desegregated). About 57% of the students in sample Pilot Elementary schools were reported eligible for ESEA Title I services, while the corresponding percentage for sample Basic Elementary schools was approximately 44%. Both of these figures are higher than comparable district-level percentages, suggesting that ESAA funds were selectively targeted to the more economically disadvantaged schools within the ESAA-funded districts.

In all three of the major 1974-75 samples, minority students perceived themselves as less favorably treated by school administrators than did non-minority students. In the Basic Secondary school sample, however, minority students had more favorable perceptions than did non-minority students of the teachers' interactions with the students.

STUDENT CHARACTERISTICS AND NEEDS

Approximately two-thirds of the sample students in sample Pilot Elementary schools (i.e., minority-isolated schools) were Black, 15% were Spanish-background, and 14% were White. By contrast, slightly more than half the students in Basic Elementary (desegregated) schools were White, another two-fifths were Black, and Spanish-background students accounted for about 10% of the sample. Of the Basic Secondary sample students, about 59% were White, almost 40% were Black, and less than 2% were Spanish-background.

According to the reports of the teachers, only about 40% of the parents of sample students had completed high school, and fewer than one-fifth of the fathers had completed college. Furthermore, a large percentage of parents were thought by the teachers to have unskilled jobs. Although the accuracy of the teachers' information may be questioned, it appears reasonably certain that the sample students were economically as well as educationally disadvantaged. On the average, lower socioeconomic levels were reported for students in minority-isolated schools, and for minority students regardless of their schools' desegregation status.

Analyses of 1973-74 and 1974-75 ESAA evaluation data clearly indicated that students in Basic and Pilot Program school districts had acute needs for compensatory education services, as evidenced by their scores on the standardized achievement tests. In both years, for example, average scores on the reading and mathematics test administered near the beginning of the school term ranged from the 13th to the 37th percentile. Viewing these results in terms of the

test publishers' national norms, the typical ESAA students' performance fell below that of almost 80% of the nation's students in the grade levels of interest.

Of the three racial/ethnic groups with the largest numbers of students in the evaluation samples (Black, White, and Spanish-background), Whites generally achieved the highest average test scores, in both 1973-74 and 1974-75, and for both the Basic and Pilot Programs. Nevertheless, White students on the average had test scores consistently below the national average. There was little evidence in the test results of interaction between socioeconomic level and race, or between sex and race. Females, and students of higher socioeconomic level, tended to have higher pretest scores regardless of race.

Averaged across racial/ethnic groups, elementary students in desegregated (Basic Program) schools showed less severe academic needs (i.e., achieved higher pretest scores) than students in minority-isolated (Pilot Program) schools. However, this difference, found in both 1973-74 and 1974-75, was largely a function of differences in racial/ethnic composition of the Basic and Pilot samples, and a more meaningful comparison can be obtained by examining minority and non-minority students separately.

There was little disparity in the pretest scores of minority students in desegregated and minority-isolated schools; in both environments, minority students at a given grade level and for a given subtest had about the same percentile ranking. By contrast, non-minority students in desegregated schools made substantially higher average test scores than non-minority students in minority-isolated schools. As a general rule, in fact, the test scores of non-minority students in minority-isolated (Pilot) elementary schools tended to be closer to those of their minority peers in those same schools than to the scores of their non-minority counterparts in desegregated (Basic Elementary) schools. Although this finding does not necessarily imply a causal relationship between school desegregation status and pretest performance of the non-minority students, it is an interesting observation in its own right.

RESOURCE ALLOCATIONS

In Fiscal Year 1975 (second year of the evaluation), total funds obligated nationally for the ESAA Basic and Pilot Programs were about $135 million and $34 million, respectively. The corresponding figures for the two programs in Fiscal Year 1974 were $156 million and $27 million. What these national allocations meant to the individual school receiving ESAA funds can best be seen in the table below, which shows for schools in the 1974-75 samples the total per-pupil funding, and the per-pupil funding derived from ESAA grants, from other (non-ESAA) supplemental programs, and from regular district expenditures. These figures represent averages across all ESAA-funded (treatment) schools used in the study's impact analyses--i.e., all ESAA-participating schools in the samples for which there were matched non-ESAA (control) schools.

Per-Pupil Funding in Sample ESAA-Participating Schools in 1974-75

Funding Source	Evaluation Sample		
	Basic Elementary	Basic Secondary	Pilot Elementary
ESAA	$66 (5%)	$22 (2%)	$125 (11%)
Non-ESAA Supplemental	$120 (10%)	$12 (1%)	$122 (10%)
Regular	$1051 (84%)	$983 (97%)	$935 (79%)
Total*	$1238 (100%)	$1018 (100%)	$1182 (100%)

*Because of rounding procedures, component expenditures do not always add up precisely to the totals shown.

All per-pupil figures shown in this table were calculated across the total school enrollments, to allow direct comparisons of per-pupil allocations from different sources. When averaged across only those students listed by the schools as ESAA program participants, the per-pupil ESAA expenditure figures are increased to $191, $139, and $212 respectively for the Basic Elementary, Basic Secondary, and Pilot Elementary Samples. Nevertheless, in terms of

impact on the total school expenditures across the entire student body, it is clear that the ESAA funds were a relatively small part of the schools' budgets. In the Basic Elementary schools, for example, only one dollar per pupil came from ESAA for every nineteen dollars from other funding sources.

Also apparent in the table above is the difference among the three samples in supplemental per-pupil expenditures. The largest ESAA per-pupil expenditures, and the largest supplemental expenditures from sources other than ESAA, were in sample Pilot Elementary schools, while the smallest expenditures from ESAA and other supplemental sources were in Basic Secondary schools.

Total 1974-75 per-pupil expenditures in the sample ESAA-participating (treatment) schools were significantly higher than those in the paired non-ESAA (control) schools, for all three evaluation samples. These differences, however, were usually only a small fraction of either of the two expenditure figures being compared. Furthermore, in the Basic and Pilot Elementary samples, there were no significant differences between the ESAA-participating and non-ESAA schools in the allocations of supplemental funds for activities having apparent relevance to achievement or school climate (e.g., reading and math instruction, new curricula, guidance and counseling, and intergroup and cultural enrichment). While ESAA-participating schools in the Basic Secondary sample spent significantly more than non-ESAA control schools for reading and mathematics instruction, the size of these differences ($8 more per pupil in reading and $4 more for mathematics) makes their practical importance doubtful.

SERVICES DELIVERED

In both 1973-74 and 1974-75, ESAA-participating schools in all three evaluation samples spent the largest share of their ESAA funds, and of other, non-ESAA funds, for instruction in reading and mathematics. In 1974-75, for example, Basic Elementary and Basic Secondary schools focused roughly three-fourths of both ESAA and non-ESAA funds on instruction in these basic skills, while Pilot Elementary schools devoted approximately two-thirds of their funds for this

purpose. Percentage expenditures for other services varied somewhat across samples. In Basic Elementary sample schools, for instance, the major areas of both ESAA and non-ESAA expenditures, other than reading and math instruction, were new curricula, and administrative and auxiliary services. In the Basic Secondary sample, by contrast, the major expenditure areas (other than basic skills) for ESAA funds were intergroup and cultural enrichment, and guidance and counseling, while that for non-ESAA funds was career education.

As in 1973-74, the results for 1974-75 show that resources and services were targeted to needy school districts, schools, and students. ESAA grants, as noted above, were awarded to districts having large percentages of students with acute needs for compensatory education (i.e., low scores on standardized achievement tests) and with low socioeconomic levels; those districts, in turn, directed ESAA funds to schools that had nigh proportions of academically needy and financially disadvantaged students. A strong relationship between the need for compensatory services and the targeting of ESAA resources was shown by significant correlations between achievement test scores and ESAA expenditures: in general, schools having the greatest need (i.e., the lowest reading and mathematics pretest scores) had the highest levels of ESAA per-pupil expenditures.

Evidence also shows that supplemental funds including ESAA expenditures were translated into basic skills instruction and other supplemental services that were targeted toward needy students. In all three evaluation samples, students with greater needs for compensatory education (i.e., lower pretest achievement scores) tended to receive greater amounts of instruction in reading and mathematics than less needy students. This trend was further corroborated by analyses of resource-utilization data collected in 24 of the sample schools constituting the In-Depth Study* sample. On the average, classroom teachers in schools with

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*This study is more fully described in Wellisch, J. B., Marcus, A. C., MacQueen, A. H., and Duck, G. A. An In-Depth Study of Emergency School Aid Act (ESAA) Schools: 1974-1975, TM-5236/010/00, System Development Corporation, July, 1976.

more needy students devoted more time to reading and math instruction, including lesson plan preparation, than teachers in schools with less needy students. Similarly, the resources allocated to remedial reading and math specialists, and to inservice training for classroom teachers, were greater in needy schools than in the less needy schools.

In summary, evidence from the first two years of program implementation (1973-74 and 1974-75) indicates (a) that the ESAA resource allocation process successfully dispensed funds to districts with needy students, (b) that those districts in turn allocated ESAA funds to needy schools, and (c) that the recipient schools translated the funds into needed services and targeted those services toward students with acute needs for compensatory education programs.

PROGRAM IMPACT

In the first evaluation year (1973-74), there was little evidence of substantial differences in program resources or services between the ESAA-funded (treatment) schools and the non-ESAA (control) schools. For this reason, and because the sample students had received only about five and a half months' exposure to ESAA programs that were still in their initial implementation phase, it came as no surprise that there was no evidence of ESAA program impact, i.e., that no treatment-control differences in achievement test gains were found.

During the second year (1974-75), there were indications of a possible trend toward larger differences in total funding between ESAA-participating and non-ESAA schools, though allocations for activities seemingly relevant to the outcome measures were still similar for the two groups of schools. Again, there was no clear evidence of ESAA program impact, on either test score gains or gains in school climate measures. Within the Basic Elementary sample, treatment (ESAA-funded) schools made larger gains than control (non-ESAA) schools in both reading and mathematics, and in all three grade levels sampled. Despite the consistency in direction of these findings, however, none of the differences

was statistically significant. Thus, it will be important in subsequent analyses to examine results for the third evaluation year (1975-76) to determine whether the apparent trends toward greater treatment-control differences in resources and in outcomes increased in the final year of the evaluation.

Additional analyses were performed, using national test norms rather than the control (non-ESAA) schools as a benchmark for evaluating achievement gains of the ESAA-participating schools. The assumption underlying these analyses was that ESAA might be considered successful in a school if, on the average, ESAA-participating students in that school exceeded the test score gains required during the school year to maintain their same ranking relative to the nation's total population of students (as represented by the sample used to develop the publishers' norming tables). For example, if a test score gain of 17 points were required to maintain a school's initial ranking at the 20th percentile, and if the sample ESAA-participating students in that school had an average gain of 23 points, the ESAA program in that school would be classified for purposes of these analyses as successful.

Results using this definition of success varied with grade level and subject area. Overall, however, about 40% of the Pilot Elementary and Basic Elementary schools met the success criterion in reading, and almost 75% of the schools in those samples met the criterion in math. In the Basic Secondary sample, about 30% of the schools met criterion in math; there were no appropriate norms in secondary reading for determining the number of schools "successful" in that content area. In general, then, these results seem to present a somewhat more positive picture of the ESAA-participating students' performance than do the treatment-control comparisons. It should be noted, however, that the criterion of success used here, based on national test norms, is somewhat arbitrary, and subject to differing interpretations according to one's expectations regarding the effects of compensatory education programs.

RELATIONSHIPS AMONG PROGRAM VARIABLES, STUDENT ACHIEVEMENT, AND SCHOOL CLIMATE

For the exploratory analyses reported here, 1974-75 data from ESAA-funded (treatment) and non-ESAA (control) schools were combined, since the purpose was to determine what program features were associated with successful outcomes, regardless of funding sources for those programs. The relationships discovered in these analyses, though somewhat tentative, suggest a number of important interactions that have policy implications for ESAA and similar educational programs.

Before proceeding further, it should be noted that the relationships summarized below represent general trends, but were not always found at every grade level or for every subtest. Readers interested in greater details of the findings are referred to the source documents listed at the beginning of this summary report.

Two sets of relational analyses were performed. The first set used data from all of the 1974-75 sample districts and schools, while the second set was based on a subsample consisting of 24 elementary schools used in the In-Depth Study. The In-Depth Study supplemented the overall ESAA evaluation, and was designed to meet the U.S. Office of Education's requirement for a more detailed and comprehensive examination of program operations at schools selected to cover a fairly wide range of effectiveness in raising students' achievement levels.* A number of special analyses were possible for the In-Depth sites because of the use in those schools of intensive classroom observations and interviews, as well as the questionnaires and tests used in all other sample sites.

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*The detailed report of the In-Depth Study is referenced in the footnote on Page 12.

Considering first the results from the total samples of districts and schools, the Basic and Pilot Elementary samples showed larger reading and mathematics gains in sites with higher regular (district-supported) per-student expenditures.

Similar though somewhat weaker relationships were found between total (regular plus supplemental) per-student expenditures and achievement. Also, in the Pilot Elementary sample, larger mathematics gains were associated with greater supplemental expenditures for mathematics instruction, and were also (though less strongly) related to greater emphasis on drill and practice procedures in the math instruction. In the Basic Elementary sample, there was a tendency for larger reading gains to be associated with more recent teacher inservice training in reading instruction.

Several significant relationships were found between achievement scores and program characteristics in the Basic Secondary sample. Larger mathematics test gains were associated with larger amounts of instructional time in mathematics, with more highly trained mathematics teachers, and with smaller pupil-to-teacher ratios. Also at the secondary level, larger reading gains were made by students in districts that undertook more activities designed to facilitate and support school desegregation. This latter finding is particularly important because of its similarity to relationships found in the first evaluation year (1973-74) at the elementary level.

Policy-relevant relationships were also found with respect to certain measures of the students' perceptions of school climate (i.e., perceptions of teacher-student, principal-student, and student-student interactions, perceived school discrimination, feelings of alienation). At the elementary level (Pilot and Basic samples), several climate indicators showed more positive gains (improved climate) where students expressed a liking for school and where they perceived their teachers as supportive. In the Basic Secondary sample, less feeling of alienation was reported by students in schools where the sample teachers reported positive attitudes toward desegregation.

Analyses based on the In-Depth Study sample of 24 elementary schools yielded additional findings of considerable importance for ESAA program policy formulation. In these analyses, elementary schools found successful in reading or math (as indicated by their gains in percentile rankings over the school year) were compared with a demographically similar group of schools that showed less success in reading or math. The major dimensions on which comparisons were based were the schools' organizational climate, parental and community involvement, reading and math instructional practices and related teacher attitudes, reading and math instructional resources, and equality of educational opportunity. In-Depth Study results in each of these areas are summarized below.

Parent and Community Involvement

Two major issues were investigated in the analysis of parent and community involvement at school. The first issue was the degree to which parent involvement was associated with certain promotional activities designed to increase active parent participation. None of the promotional activities examined in this study (e.g., holding open house, providing evening entertainment, distributing school newsletters) was found associated with parent participation. However, parents were more involved in schools where the principal assumed more of the responsibility for establishing policy in the area of school-community relations.

The second issue involved the relationship between parent participation and student achievement. Schools were significantly more likely to show math gain--that is, their students were more likely to improve their standing relative to the nation's student population--when parents were present in the classrooms as paid instructional aides, volunteers, or visitors. The relationship to reading achievement was also positive, though not statistically significant.

It is important to note that this relationship between parent involvement and student outcomes was quite specific to parent participation in the classroom.

Apparently the use of non-parent aides did not have a comparable association with students' achievement gains, nor did parent participation outside the classroom (e.g., as clerks, or on advisory committees).

Instructional Resources Used in Reading and Mathematics

Reading and math resources were analyzed in terms of class size, instructional time in reading and math, staffing practices, equipment and materials, inservice training, and teachers' education. The allocation patterns of these resources among the successful and less successful elementary schools revealed two relationships with students' gains in mathematics. First, schools were significantly more likely to be successful in raising math achievement when more of their resources were allocated to remedial specialists in math. The same trend was obtained for reading achievement, though the results were not statistically significant. Second, schools were significantly less likely to be successful in raising math achievement when more of their resources were allocated to math instructional aides (as contrasted with remedial specialists).

Reading and Mathematics Instructional Practices

While several variables related to the teachers' classroom procedures and attitudes were found to be associated with achievement gains in the In-Depth sample schools, the most consistent and interpretable involved the teachers' use of behavioral objectives, and their use of structured practice sessions.

An index of the use of behavioral objectives was significantly associated with both reading and math gains; that is, schools were more likely to show achievement gains when teachers organized their instruction around lesson objectives defined in terms of specific skills and knowledge to be mastered by the students. The behavioral objectives index was defined in such a manner that it would have a high value when teachers (a) maintained student records that showed attainment of specific instructional objectives, (b) placed a relatively high value on the use of behavioral objectives, and (c) placed strong emphasis on revising lesson

plans (rather than abandoning objectives) when instructional objectives were not attained.

Schools were also more likely to show reading gains when practice sessions were observed to include many of the steps necessary for mastery of the lesson objectives, and when the sessions were relevant to the lesson objective (observer judgments). No relationship was found with math achievement gains.

A third relationship--or actually, a cluster of relationships--is of great potential interest, but is also more difficult to interpret than the two findings cited above. Schools whose teachers frequently praised the students were significantly less likely to make gains in reading; there was a similar but non-significant relationship in mathematics. Although this finding seems surprising at first, it can perhaps be explained by the relationships found between frequency of praise, and several other teacher behaviors and attitudes. First of all, there is some evidence that the praise was given somewhat non-selectively. That is, students tended to receive praise regardless of whether they were exhibiting desired behavior (e.g., giving correct responses to questions). It has long been recognized that feedback such as praise must be used selectively to be effective. Secondly, teachers giving more praise tended to stress psychoemotional goals as more important than academic goals, and also tended to give the students less practice time. Thus the evidence, while somewhat tentative and circumstantial, suggests that extensive use of praise may have impeded academic growth by de-emphasizing a task-oriented approach to instruction (e.g., providing practice time or informing students of their weaknesses as well as their strengths).

Organizational Climate

Two dimensions of organizational climate were found significantly related to achievement gains. The first was an index of administrative leadership in the school: schools characterized by strong administrative leadership were

significantly more likely to raise math achievement and somewhat more likely to raise reading achievement. For purposes of this analysis, a school was rated high on administrative leadership (a) when its administrators assumed responsibility for selecting basic instructional materials, (b) when the principal attributed considerable importance to decisions regarding the selection of basic instructional materials, and (c) when teachers in that school more accurately perceived the principal's attitudes regarding various instructional practices. Thus, the administrative leadership measure applied here was specifically and directly concerned with the instructional process.

Another finding in the analyses of organizational climate was that schools were significantly more likely to show math gains where greater district-level support for new teachers was offered. Orientation courses, inservice training, and documentation of procedures were the most common forms of teacher support at the district level.

Equality of Educational Opportunity (EEO)

Equal treatment for students of all racial/ethnic groups is the law of the land, and requires no justification on the basis of possible effects on student achievement. Nevertheless, it seems worth noting that, among the desegregated (Basic Elementary) schools in the In-Depth sample for which adequate EEO data were available, reading achievement gains were significantly less likely to be found in schools whose teachers were observed directing a disproportionate amount of negative feedback toward minority students (e.g., pointedly ignoring the students, criticizing them, or sending them out of the class).

Other relationships of interest were found among the various EEO variables themselves. For example, schools with segregated seating patterns were less likely to have student intergroup mixing during recess and lunch than schools without such patterns. In addition, schools that used fewer multi-ethnic instructional materials also tended to have segregated seating patterns, and the

teachers in those schools tended to exhibit disproportionately more negative behavior (criticism, etc.) toward minority students. Finally, students' perceptions of the quality of teacher-student interactions tended to be less favorable in schools where teachers were observed to direct disproportionately large amounts of negative behavior toward minority students. In short, the individual elementary schools in the In-Depth study appeared to reflect a consistent school-level pattern, favorable or unfavorable, that cut across several dimensions of EEO.

In reviewing the results of the relational analyses--those using data from the entire sample as well as analyses based on the smaller In-Depth subsample--it should be recognized that the findings are still tentative. Sample sizes for certain analyses, especially those associated with the In-Depth Study, were small. Furthermore, neither schools nor students were randomly assigned to the various program approaches being compared. Rather, these analyses, unlike the impact analyses, depend upon naturally occurring inter-site variations in program approach. Thus, outcome differences attributed to certain program variables may in fact have resulted from uncontrolled variations in other characteristics of the districts or schools whose programs are being examined.

Nevertheless, while any particular relationship described above might be spurious, the total pattern of relationships strongly suggests an important conclusion: that school program characteristics did make a difference in student achievement. At the risk of serious over-simplification and over-generalization, the more pervasive trends in the relationships discussed above may be summarized as follows:

- Results of several analyses suggest that program funding and resources can make a difference, particularly if they are applied to activities directly related to the outcome measures of concern. In the Pilot Elementary Sample, larger math gains occurred in schools with larger supplemental expenditures for mathematics instruction, while in the

Basic Secondary Sample, larger math gains were associated with smaller student-to-teacher ratios (i.e., with a larger staff relative to student enrollment). Both the Basic and Pilot Elementary samples showed larger reading and mathematics gains in sites with larger regular (district-supported) per-student expenditures. In the In-Depth Study sample, schools were more likely to be successful in raising math achievement when more of their resources were allocated to remedial math specialists.

- A greater degree of instructional program focus and structure appears to aid the achievement of low-achieving, disadvantaged students such as those in the ESAA-participating schools. In the Pilot Elementary sample, larger mathematics gains were associated with greater emphasis on drill and practice procedures in math instruction. In the In-Depth Study sample, there was a greater probability of reading and math gains in schools that made use of behavioral objectives to guide their instruction, and in schools that provided practice sessions to ensure mastery of those objectives. Conversely, schools where teachers gave frequent and apparently non-selective praise were less likely to show gains in reading achievement; this relationship can be interpreted as indicating the need for careful structuring by teachers of all aspects of the teaching-learning process, including the use of praise and other reinforcers. Finally, gains in both reading and math achievement were more likely to occur in schools whose principals provided focus and structure, in the form of strong administrative leadership. In particular, achievement gains tended to be associated with principals who were personally committed to the selection of appropriate instructional materials for their schools, who exerted strong influences on the selection process, and who communicated clearly and unambiguously to the teachers their own attitudes about how instruction should be conducted.

- Parent involvement can apparently be beneficial to student achievement, when those parents are present in the classrooms as paid instructional aides, volunteers, or visitors. This effect seems not to generalize to the use of non-parent aides, or to parent participation outside the classroom.

- Efforts to improve interracial climate and attitudes, while desirable in their own rights, evidently have beneficial effects on achievement as well. In the Basic Secondary sample, larger reading gains were made by students in districts that undertook more activities designed to facilitate and support school desegregation; a similar relationship was found in Year One at the elementary level. In the In-Depth Study sample, reading achievement gains were significantly less likely to occur in schools whose teachers directed a disproportionate amount of negative behavior, such as criticism, toward minority students.

CONCLUSIONS

The combined data from the first two years of the ESAA evaluation show clearly that dollars have been targeted toward needy school districts, schools, and students; further, those dollars have been translated into services directed toward students with needs for such services. This finding is important for two reasons. First, it implies that the ESAA resource allocation process is functioning as intended--a statement that could not truthfully be made about many other compensatory education programs in the past. But at the same time, it raises questions about why a program so appropriately targeted should have yielded no solid evidence of overall impact (i.e., impact assessed by pooling across sites) on student achievement or school climate. Of course, in any evaluation, the outcome measures used as criteria of program success may be insufficiently sensitive to changes that might have been fostered by that program. However, the achievement tests used in the present study, while not without their deficiencies, were carefully selected for their appropriateness to the study's purposes.

A more convincing explanation for the apparent lack of ESAA impact lies in the fact that, possibly because of the sample districts' freedom to adjust their allocation of other federal and state program funds among the various schools, the ESAA participating (treatment) schools often did not differ greatly from the paired non-ESAA (control) schools with respect to the total per-student

funds allocated for ESAA-relevant activities. Though the differences appeared greater in the second year of ESAA implementation than in the first, most were still of modest size. Nor was a pattern of large or consistent differences found between ESAA-participating and non-ESAA-participating schools in the services offered to their students. Thus, the anticipated clear-cut treatment differences between ESAA-participating and non-ESAA schools--differences on which the expectations of outcome differences were based--largely failed to materialize. Nevertheless, there are definite indications that some local ESAA projects were quite effective, but that the successes of those projects were obscured in the overall impact analyses by the failures of other projects. When data from both ESAA-participating and non-ESAA schools were combined, and differences in funding source were ignored, certain program characteristics were found to be associated with more favorable outcomes. While the strength and the generalizability of the evidence favoring particular program approaches varied considerably, it appears that the more successful programs were ones in which

- greater expenditures and personnel resources were focused on activities related to the evaluation's outcome measures (i.e., basic skills and school climate),
- there was stronger and more assertive administrative leadership, particularly with respect to instructional materials and policies,
- lessons were more highly structured, with teachers using praise very selectively, and making greater use of behavioral objectives and of practice sessions targeted toward those objectives,
- parents were more heavily involved in the classroom, and
- efforts were made by teachers and administrators to promote positive interracial climate and attitudes.

It should be emphasized that all of the findings reported here are somewhat provisional, as the data for the third evaluation year (1975-76) have yet to be analyzed. When the 1974-75 data were compared with the 1973-74 data, there appeared to be a trend in the second year toward slightly greater expenditure

differences between ESAA-participating and non-ESAA schools, and, in certain cases, toward greater achievement differences as well. Thus the third-year data and longitudinal data will be closely examined in the next report for more positive signs of ESAA impact. Another major focus of the Year Three Report will be to seek verification of relationships found in 1973-74 and 1974-75 between program characteristics and outcomes. Such cross-year verification would increase the confidence that can be placed in those relationships, and would permit stronger recommendations to be made for future program improvements.